Support Vector Machines

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For a point \mathbf{x}_1 on plane 1 and \mathbf{x}_2 on plane 2, we have:

$$\mathbf{x}_2 = \mathbf{x}_1 + t\mathbf{w}$$
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$$\Rightarrow \mathbf{w} \cdot \mathbf{x}_1 + t \|\mathbf{w}\|^2 + b_1 - b_1 + b_2 = 0 \Rightarrow t = \frac{b_1 - b_2}{\|\mathbf{w}\|^2} \Rightarrow D = t \|\mathbf{w}\| = \frac{|b_1 - b_2|}{\|\mathbf{w}\|^2}$$